

Centring women and youth in renewable energy: Kenya Off-grid Solar Access Project (KOSAP)

By Youth For Sustainable Energy (Y4SE)

KOSAP: background and project goals

Almost 13 million Kenyans don't have access to electricity. Even more, 38 million people lack access to clean cooking.¹ The access deficit in Kenya is huge, especially in rural areas, and the Kenya Off-grid Solar Access Project (KOSAP) is one of many initiatives the government and its partners have taken up to attain its targets on universal access to clean energy by 2030.

Financed by a WBG loan of \$150m approved in 2017,² KOSAP seeks to provide approximately 1.3 million people and 567 community facilities with new or improved electricity services. In addition, the project aims to facilitate the adoption of 60,000 energy-efficient cooking solutions by September 2026.

The project targets 14 underserved counties,³ which are mostly remote and located on arid or semi-arid lands. Population density in the areas is low, infrastructure is poor, and the terrain is difficult. The areas require a decentralised energy system, and one of the

projects' core principles is an adaptable approach: it acknowledges that off-grid energy access needs tailored solutions that reflect the unique needs and challenges of different communities.

The project is structured into four components:

1. providing stand-alone solar systems and clean cooking solutions for households;
2. providing stand-alone solar systems and solar water pumps for community facilities;
3. capacity building;
4. building mini-grids for community facilities, enterprises, and households (to be completed in 2026).

The project uses several different financing models to reach its goals. Enterprises received grants to establish or expand operations. Solar service providers had two financing options: Results-based financing (RBF) for expansion costs and a debt facility for inventory and consumer financing. Clean cooking solution providers received three types of financial support: ex-ante RBF for market development and inventory, and ex-post incentives based on verified sales. This support helps companies expand into hard-to-reach areas.

Economic and business impact: more jobs and opportunities, especially for women

KOSAP has demonstrated significant job creation in management, supervisory, technical and sales roles. Through its capacity-building component, around 150 county energy and technical officers have received career progression training, broadening their capacity to deliver the project and also contributing to their personal growth.

The jobs created have had a particularly positive impact on youth and women. Most of the companies involved in the project have prioritised local employment, with more than 50% of their workforce being female. For example, Nyalore Impact Ltd has employed 70% women, mostly young people. Companies have also focused on skills development, thus building local capacity for repair and maintenance services and sales.

Additionally, solar systems have enabled new business opportunities, with beneficiaries reporting that their homes have since become business hubs serving the community. Households with solar home systems are now able to charge mobile phones for their neighbours at a fee.

¹ Tracking SDG 7 Report, The Energy Progress Report, 2025. IEA, IRENA, UN, World Bank, and WHO. <https://www.seforall.org/system/files/2024-06/Tracking%20SDG7%20-%20final%20report.pdf>

² Project Appraisal Document, 2017. Report No: PAD2008. World Bank Group. <http://documents.worldbank.org/curated/en/212451501293669530>

³ 14 underserved KOSAP Counties: West Pokot, Turkana, Marsabit, Samburu, Isiolo, Mandera, Wajir, Garissa, Tana River, Lamu, Kilifi, Kwale, Taita Taveta, and Narok.

Solar systems have also helped existing businesses work more effectively. “I can now run my small grocery business until late,” Karema Kenga from Kiwapa in Kilifi County recounts with excitement. Before solar, Karema Kenga would close her business at around 6 p.m., but this changed after acquiring her solar home system. Now she runs the business up to 9 p.m. or 10 p.m. and has an increased income.

Socio-economic impact: access to education through electricity

The project has enabled energy service providers to create or expand their distribution channels in the 14 counties, increasing the availability of clean energy solutions. As of June 2025, the project had connected 800,000 people to electricity.⁴ Also, households can install solar solutions more flexibly thanks to the payment plans and waivers.

In Kilifi, a village once engulfed in total darkness, solar lights now shine as beacons of transformation — bringing not just light, but a renewed sense of security and freedom. The installation of solar systems has improved safety, particularly for women. One beneficiary shared that she can now leave her home unattended with peace of mind, thanks to her solar lamp that stays on throughout the night.

Solar energy has increased access to information and provides entertainment. Some households can now sit together and watch their beloved TV shows, listen to music, and importantly, stay informed through news channels and educational programmes. The children can now study at night in a well-lit space without worrying about the candle or kerosene lamp going out.

The transition to clean energy solutions for both cooking and lighting has increased household savings by reducing energy costs and saving time required for household tasks. The saved time can now be spent on income-generating activities. Ms Esther Muriuki from Malindi sub-county confirmed that she has greatly benefited from the electric pressure cooker she got through the project. With the cooker, she is able to work until late and not worry about dinner plans, as it cooks faster with little effort, unlike the charcoal stove she was using previously.

Environmental impact: sustainable energy, improved health

KOSAP contributes significantly to environmental conservation by harnessing solar energy to provide sustainable and cost-effective solutions. The project contributes to a substantial reduction in carbon emissions. When this is combined with the transition to more efficient cooking methods, the cumulative environmental impact becomes even more significant. The transition to cleaner cooking solutions reduces overreliance on trees for fuel.

Furthermore, indoor air quality has improved in many households since the elimination of kerosene lamps, candles and inefficient stoves, with direct health benefits.

Environmental and community safeguarding

The project meets the safeguarding requirements, ensuring that Indigenous people, vulnerable people and the environment are protected. It incorporates Environmental and Social Safeguards Framework requirements, which means that there has to be meaningful participation, decent compensation, and inclusion of various stakeholders throughout the project processes.

The project, including the mini-grid sites, has undergone an Environmental Impact Assessment. The WB has assessed that the environmental impacts can be managed with a minimal budget.⁵ For example, the clean cooking solutions are required to meet the minimum efficiency standards, their batteries should have a minimum of a 5-year warranty, and they should be disposed of in standard landfills. Communities were consulted during project design, targeted subsidies were introduced to reach low-income households, and provisions were made to ensure inclusion of women and marginalised groups. This shows that MDBs can apply their own safeguard systems in ways that protect rights and expand access. The broader lesson is that MDBs need to consistently uphold these standards — ensuring FPIC, compensation, and real participation across all projects — rather than treating safeguards as tick-box exercises.

In addition, the project is targeting counties where women are disproportionately more affected. Kenya ensured inclusivity through its Gender Policy, ensuring deliberate inclusion of women throughout the project.⁶

⁴ KOSAP Quarterly Newsletter, June 2025

⁵ KOSAP Project Appraisal Document, Report No: PAD2008, 2017

⁶ Gender Policy, Ministry of Energy and Petroleum, Kenya, 2019

Gaps and conclusions: what still needs to be addressed?

KOSAP demonstrates a successful model for inclusive energy access financed by a multilateral development bank and offers valuable lessons that can inform MDB policy reform to accelerate inclusive energy access across Africa. Its approach demonstrates the importance of inclusive design that prioritises underserved regions and leverages the private sector's participation.

Embedding community-centred approaches and ensuring flexibility in delivery models, KOSAP has shown how tailored solutions can succeed where one-size-fits-all models fail. Finally, it evidences the importance of youth and women's inclusion, not only as beneficiaries but also as leaders in driving the transition.

During the project, however, several effectiveness and sustainability gaps were identified. Firstly, the three-month ex-ante support period was observed to be too short, especially given the vastness and challenging terrain of most counties. At least six months should be given to ensure a meaningful market establishment.

In addition, the engagement period of service providers should be lengthened to allow sufficient time to build sustainable businesses and trust within communities. Robust operation and maintenance services should also be taken into account to build sustainable after-sales services and ensure long-term adoption of clean energy technologies. Lastly, while youth engagement is emerging through initiatives funded by the WB, such as the Nyota Project, KOSAP could develop more structured, youth-centric interventions.

Overall, the KOSAP model represents a successful framework for inclusive energy access that balances private sector engagement, consumer affordability, and comprehensive safeguarding. With refinements on the identified gaps, this model offers significant potential for replication across similar contexts globally.



Off-grid solar power system
Photo by KOSAP